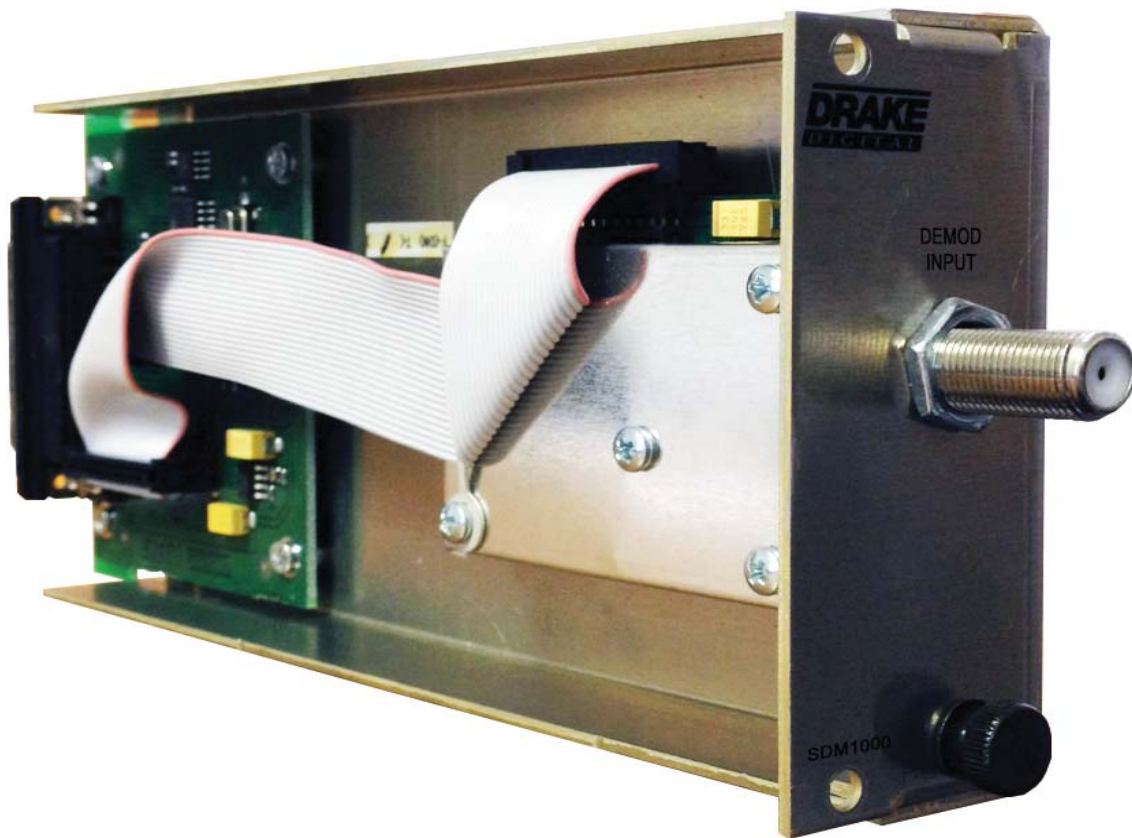




SDM1000 Satellite Demodulator Module

INSTRUCTION MANUAL



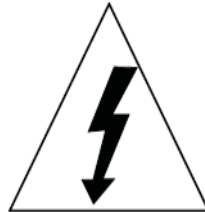
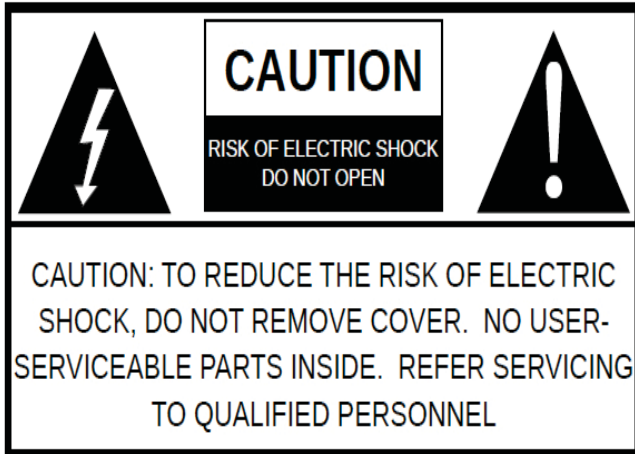
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WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE TO RAIN OR MOISTURE



A product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.



The lightning flash with arrow head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

*****NOTE: Connect and apply power only after all other connections are made.*****

IMPORTANT SAFETY INSTRUCTIONS

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

1. Read Instructions: All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions: The safety and operating instructions should be retained for future reference.
3. Heed Warnings: All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions: All operating and use instructions should be followed.
5. Cleaning: Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleansers. Use a damp cloth for cleaning.
6. Attachments: Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture: Do not use this product near water—for example, near a bathtub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.
8. Accessories: Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. Ventilation: Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

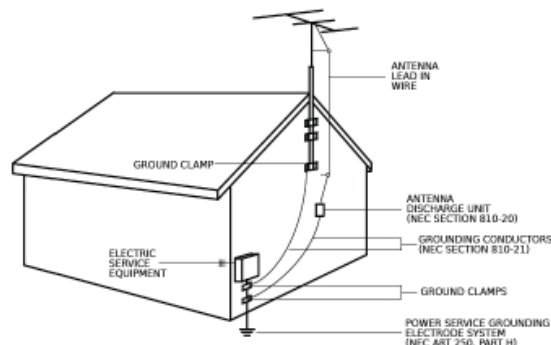
11. **Power Sources:** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization:** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternate Warnings – If this product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
13. **Outdoor Antenna Grounding:** If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
14. **Power-Cord Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
15. **Lightning:** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines:** An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.
17. **Overloading:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry:** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing:** Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service:** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a) When the power-supply cord or plug is damaged,
 - b) If liquid has been spilled, or objects have fallen into the product,
 - c) If the product has been exposed to rain or water,
 - d) If the product does not operate normally by following the operating instructions.

Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation, e. If the product has been dropped or damaged in any way, and f. When the product exhibits a distinct change in performance—this indicates a need for service.

21. **Replacement Parts:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutes may result in fire, electric shock or other hazards.
22. **Safety Check:** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting:** The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. **Heat:** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

NOTE TO CABLE INSTALLER:

THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820-40 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING AND, IN PARTICULAR, SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.



NEC = NATIONAL ELECTRIC CODE
Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70

THREE YEAR LIMITED WARRANTY

R.L. DRAKE LLC warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase.

During the warranty period the R.L. DRAKE LLC or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE LLC may replace a defective unit.

To obtain such a warranty service, the original purchaser must:

- (1) Retain invoice or original proof of purchase to establish the start of the warranty period.
- (2) Notify the R.L. DRAKE LLC or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
 - (a) the model and serial number,
 - (b) the identity of the seller and the approximate date of purchase; and
 - (c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
- (3) Deliver the product to the R.L. DRAKE LLC or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE LLC determines is due to:

- (1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
- (2) Misuse, abuse, neglect or improper installation.
- (3) Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE LLC's entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

For Service, contact:

R. L. DRAKE HOLDINGS LLC
9900 Springboro Pike
Miamisburg, OH 45342 U.S.A.

Customer Service and Parts: (937) 746-6990

Fax: (937) 806-1576

Email: servicehelp@rldrake.com

Web Site: www.rldrake.com

Introduction

The Drake® SDM1000 Satellite Demodulator Module (in tandem with the Drake® MEQ1000 Multiplexing Hybrid QAM Modulator) is designed to provide a QT Plus transcoding solution for the new Shaw Anik G1 satellite. The SDM1000 is designed to handle the 8PSK turbo FEC and higher data rate of Anik G1.

Installation

This unit installs into the MEQ1000 chassis in the same fashion as the DTD1000 Digital Tuner and Demodulator Module, ASII ASI Input Module, or the SDE24A, HDE24, and SDI24A Encoder Modules:

1. Ensure power to the MEQ1000 is off.
2. Gently slide the SDM1000 Satellite Demodulator Module into one of the open input module bays in the rear of the MEQ1000.
3. Make sure the SDM1000 is inserted all the way into the MEQ1000. You will know it is inserted all the way when the outer lip of the SDM1000 is flush against the rear wall of the MEQ1000.
4. Use one of the enclosed fastening screws to secure the SDM1000 from coming loose from the MEQ1000.
5. Connect all cables to be input into the SDM1000 and output from the MEQ1000.
6. Once SDM1000 is inserted into the MEQ1000 and all cables are securely connected, power up the MEQ1000 by inserting the Power Cord into an electrical wall outlet.

DO NOT INSERT THIS ENCODER WITH POWER APPLIED TO THE MEQ1000 CHASSIS. RESULTING DAMAGE WILL NOT BE COVERED BY THE LIMITED WARRANTY.

Cable the inputs appropriately (see the Rear Panel Connections section for details).

Top Hole
for securing
SDM1000
to chassis

Satellite
RF Input
Connector

Bottom Hole
for securing
SDM1000
to chassis



Operation

Power on the chassis, and select the newly-inserted SDM1000 unit via the LEFT and RIGHT buttons on the front panel. The following configuration settings are available for the SDM1000 (defaults listed in bold *italics*):

FREQUENCY:	from 250-2150MHz
SYMBOL RATE:	from 2-45 Msymbols/sec
DEMOD MODE:	QPSK DVB SCAN QPSK DVB 1/2 QPSK DVB 2/3 QPSK DVB 3/4 QPSK DVB 5/6 QPSK DVB 7/8 QPSK DTV SCAN QPSK DTV 1/2 QPSK DTV 2/3 QPSK DTV 6/7 QPSK DCII SCAN QPSK DCII 1/2 QPSK DCII 2/3 QPSK DCII 3/4 QPSK DCII 5/6 QPSK DCII 7/8 QPSK DCII 5/11 QPSK DCII 3/5 QPSK DCII 4/5 LDPC SCAN LDPC QPSK 1/2 LDPC QPSK 3/5 LDPC QPSK 2/3 LDPC QPSK 3/4 LDPC QPSK 4/5 LDPC QPSK 5/6 LDPC QPSK 8/9 LDPC QPSK 9/10 LDPC 8PSK 3/5 LDPC 8PSK 2/3 LDPC 8PSK 3/4 LDPC 8PSK 5/6 LDPC 8PSK 8/9 LDPC 8PSK 9/10 TURBO SCAN TURBO QPSK 1/2 TURBO QPSK 2/3 TURBO QPSK 3/4 TURBO QPSK 5/6 TURBO QPSK 7/8 TURBO 8PSK 2/3 TURBO 8PSK 3/4 TURBO 8PSK 4/5 TURBO 8PSK 5/6 TURBO 8PSK 8/9

Notes

1. If the front panel display shows INVALID VIDEO, the incoming video is not correct for the input type and resolution settings. If the front panel display shows INVALID AUDIO, the HDMI embedded audio source is not available or not PCM (uncompressed).
2. This encoder will only support the specific video resolutions outlined in the Specifications table.
3. This encoder does not support HDMI copy protection (HDCP). All HDMI sources must be un-encrypted.
4. Composite video is supported - use the Component Y (greencolored) input connector.
5. Closed-captioning data is automatically extracted when the encoder is in Composite mode. All other modes require a captioned composite video source input to the Caption connector.
6. Firmware updates may be required for MEQ1000 or EH24 chassis. MEQ1000s must be updated to v1.4 or later. EH24s

SPECIFICATIONS

SATELLITE INPUTS

Frequency Range:	950 MHz to 2150 MHz.
Input Impedance:	75 ohm, return loss = 10 dB.
Input Level Range:	- 25 dBm to - 65 dBm / transponder.
Mode:	QPSK, 8PSK.
FEC:	DVB-S2, DCII, advanced Turbo modes.
Symbol Rate:	2 MS/s to 30 MS/s.